2 EXISTING FACILITIES

2.1 Introduction

The Proposed Action would utilize the approved facilities within the Project Area that are associated with the Pipeline/South Pipeline Project, as well as the Cortez and Gold Acres facilities. The facilities include the Pipeline/South Pipeline open pit, Pipeline/South Pipeline dewatering and infiltration systems, Pipeline mill, Pipeline/South Pipeline tailings and heap leach facilities, the South Pipeline heap leach facility, Gold Acres heap leach facility, ore stockpiles, Pipeline/South Pipeline waste rock dumps, and Pipeline support facilities. In addition, the Proposed Action would utilize certain components of the Cortez facilities which are located east of the Project Area. The facilities include the Cortez continuous fluid bed (CFB) roaster, the carbon-in-leach (CIL) mill, the tailings facility, and the Cortez support facilities.

Approved Plans and environmental analysis documents for previous CGM development and exploration activities in the vicinity of the Proposed Action are summarized in the South Pipeline Final EIS (BLM 2000a, pages 2-2 through 2-8). In addition, Table 2.1.1 includes a summary of the Plans and environmental documents for CGM since 2000. Information about the existing Pipeline/South Pipeline facilities associated with the Proposed Action is briefly summarized in the following sections and is outlined in detail in the South Pipeline Final EIS (BLM 2000a, pages 2-1 through 2-26). Information concerning the Pipeline Project facilities is incorporated herein by reference from the Pipeline Final EIS (BLM 1996a, pages 2-1 through 2-67). Information concerning the infiltration operations associated with the Proposed Action is incorporated herein by reference from the Pipeline Infiltration Project EA (BLM 1999, pages 2-1 through 2-18). Information on the components of the Cortez facility is taken from the Pipeline Final EIS and the Cortez Gold Mine Expansion Project Draft EIS (BLM 1996a, pages 2-1 through 2-40; BLM 1992c, pages 2-1 through 2-75), which is also incorporated by reference. Information concerning gravel pit operations is contained in the Gravel Pit Plan Amendment (CGM 2001c; BLM 1996b).

Surface disturbance associated with the approved Pipeline/South Pipeline, and Gold Acres facilities, which are located within the Project Area, totals 7,676 acres as outlined in Table 2.1.2.

2.2 Approved Open Pits

The Pipeline/South Pipeline open pit is located in the Project Area (Figure 2.2.1). Mining of this open pit is ongoing at an average rate of 150,000 (tpd) and a maximum rate of 250,000 tpd. Approved surface disturbance for the Pipeline/South Pipeline open pit is approximately 846 acres plus a 75-acre pit adjustment zone (Table 2.1.2).

Large open pits are commonly mined in phases or stages. This is done to balance the removal of waste rock with a consistent supply of ore for the mill or heap leach, and to match the mining equipment fleet. In the case of the Pipeline/South Pipeline open pit, a total of nine stages, which are sometimes combined, result in a roughly concentric "pushback" of the pit until its ultimate economic footprint has been achieved. A brief description of the Pipeline Open Pit Stages follows:

- Stage 1 was the "starter pit." Mining commenced in March 1996 with approval of the Pipeline Project, and continued through the fourth quarter of 1998 to a bench elevation of 4,280 feet amsl. All waste rock was placed on the Pipeline Waste Rock Dump.

Table 2.1.1: Summary of Plans of Operations and Environmental Analysis Documents for Cortez Gold Mines since February 2000

Plan Date	Plan Case File No. General Location BLM Administration	Description of Operations	Prop. Acres	Environ. Assessment No./ROD	Plan Approval Date
2/2000	NV64-93-001P(96-2A) NVN 067575	South Pipeline Project Final EIS	7,616	NV063-EIS98-014	6/27/2000
12/3/1999	NVN-066621	Horse Canyon/Cortez Unified Exploration Plan	50	NV063-EA00-35	8/23/2001
2/2000	NVN–067575	Exploration Acreage Assessment[1]	91	NV063-EIS98-014	6/27/2000
1/9/2001	NVN 73789	Pediment Project Plan of Operations	1,766	NV063-EIS01-69	Pending
1/16/2001	NVN 067575(01-1A)	Modification to the Pipeline Plan of Operations for the Pipeline/South Pipeline Pit Expansion	0	NV063-EIS01-70	Pending
12/18/2001	NVN 067575 (01-2A)	Amendment to the Plan of Operations, Pipeline Gravel Pit Expansion	60[2]	NV063-DNA02-15	1/8/2002
6/2003	NVN-77313	West Pine Valley Exploration	150	BLM/EK/PL-2003 -032	Pending
7/1/2003	NVN-066621(03-1A)	Horse Canyon/Cortez Unified Exploration Plan Amendment #1	200	NV063-EA03-37	Pending
7/21/2003	NVN-078041	West Side Exploration Plan	200	NV063-EA-04-18	Pending

[1] The BLM has determined that 91 acres have been approved, through several approval processes, for exploration rather than the 98 acres sited in the South Pipeline Project Final EIS approval (see footnote [1]) for a difference of 6.8 acres.
[1] The additional 60 acres are the result of two boundary adjustments that increased the gravel pit and road surface disturbance by 67 acres and an adjustment to the exploration surface disturbance by a decrease of 6.8 acres.

- Stage 2 enlarged the Stage 1 footprint, and was mined from 1997 until 2000 to the same elevation as Stage 1. All waste rock was placed on the Pipeline Waste Rock Dump.

- Stage 3 commenced in 2000, and all waste rock was placed on the Pipeline Waste Rock Dump. Stage 3 is expected to reach the elevation of and combine with Stage 2 during 2004. The former Crescent Pit was incorporated into this stage.

- Stage 4 mining also commenced in 2000 and expanded the open pit to the south. Waste rock was placed on the combined Pipeline/South Pipeline Waste Rock Dump.

Table 2.1.2: Summary of Pipeline/South Pipeline Approved Surface Disturbance

Mine Facility Component		Approved Disturbed Acres
MINE AND PROCESS AREA		
Open Pit	Pipeline/South Pipeline Open Pit	846
	South Pipeline Adjustment Zone	75
	Subtotal:	**921**
Ore and Process Facilities	Pipeline Plant Site	56
	Plant Expansion / Ore Stockpile	77
	Pipeline (Area 28) Ore Processing and Process Ponds	878
	Area 28 Heap and Tails Expansion	54
	South Area Heap Leach Facility	758
	Gold Acres Heap Leach	49
	Subtotal:	**1,872**
Waste Rock Dumps	Pipeline/South Pipeline/Crescent Waste Rock Dump	1,813
	Gap Waste Rock Dump	0
	Subtotal:	**1,813**
Support Facilities	Soil Stockpiles	18
	Plant Area Roads	31
	Plant Access Corridor	56
	Airport Gravel Pit	487
	Frome Gravel Pit	45
	Ancillary Facilities/Roads	1,664
	County Road Construction/Cortez Access Road Relocations	79
	Drainage Diversions	21
	Subtotal:	**2,401**
	Total Mine and Process Area:	**7,007**
OTHER AREAS OF DISTURBANCE WITHIN THE PROJECT AREA		
Exploration Activities		91
Mine Water Infiltration Basins/Pipe Lines/Ditches		578
	Total Ancillary Area:	**669**
	TOTAL PROJECT AREA SURFACE DISTURBANCE:	**7,676**

- Stages 5 and 6 were combined into one mine pushback and began in 2001. These stages pushed the footprint of the open pit further to the south and to the east. All waste rock from Stages 5 and 6 is currently being placed in the Pipeline/South Pipeline Waste Rock Dump.

- Stage 7 started in 2002 and expanded the open pit to the east and southeast. All waste rock from the upper benches of Stage 7 is being placed in the Pipeline/South Pipeline Waste Rock Dump.

In addition to the Stages of mining discussed above, mining methods, slope stability, and waste rock characterization are discussed in the South Pipeline Final EIS (BLM 2000a, pages 3-7 through 3-10).

2.3 Approved Dewatering Management

2.3.1 Mine Dewatering and Disposal Operations

The approved mine dewatering and water disposal for the Pipeline/South Pipeline Project consists of a series of dewatering wells and infiltration facilities. The Pipeline/South Pipeline dewatering operations, as outlined in the South Pipeline Plan (CGM 1996, page 5-8) and the 1999 CGM Infiltration Amendment Plan, as approved by the BLM, are permitted to pump ground water at an annualized average rate of up to 34,500 gpm. These facilities are described in the South Pipeline Final EIS (BLM 2000a, pages 2-1 through 2-19 and pages 3-12 through 3-14).

2.3.2 Dewatering Induced Subsidence Management

On November 13, 2002, CGM personnel reported that earth fissures were discovered in the proximity of drilling activities east of the SAHL (currently referred to as the Windmill Fissures). It was determined that the identified fissures had captured approximately 1.6 million gallons of water released from a dewatering line break that occurred on November 8, 2002, about 1,000 feet north and up slope from the identified fissures. Between November 14 and 18, 2002, extensions of the most prominent fissures and identification of additional fissures were observed. Figure 2.3.1 shows the locations of the identified fissures relative to the existing Project facilities. A full assessment of the mechanisms for the development of the fissures and the specifics of the development in the Project Area are outlined in Section 4.3.2.2.4.

On November 18 and 19, 2002, CGM assembled a group of consultants that specialize in ground subsidence associated with a declining ground water table to discuss and observe the site conditions, review available data, and develop a response strategy. AMEC Earth & Environmental, Inc. (Amec) prepared a summary report of the investigation (Amec 2003). It was determined that the most probable source of horizontal strains sufficient to cause the fissuring is differential ground subsidence resulting from the ongoing dewatering of the alluvial aquifer. In addition, it was concluded that geologic and/or hydrological controls that are influencing the location and extent of fissuring were not sufficiently defined at that time. Existing geophysical and exploratory borehole data indicated the presence of significant contrasts in bedrock depth in the vicinity of the fissures, and measured ground water gradients may indicate the presence of faulting and strong permeability contrasts in the local alluvial section. All parties concurred that the fissures, or the suspected ground subsidence likely responsible for the development of fissures, did not pose an immediate threat to the integrity of the SAHL. Additional details on this assessment are outlined in Section 4.3.2.2.4.

2.3.2.1 Earth Fissure Management

Ground subsidence and the resulting earth fissuring can have both immediate and long-term consequences upon the integrity of engineered structures. In the case of the Project facilities, the prevailing risks appear to be associated with fissure formation, not subsidence. A comprehensive review of the Project interferometry (interferometry is the use of energy wave interference phenomena for measurement purposes, either for very small angles or for tiny distance increments (the displacement of two objects relative to one another). The Amec report (Amec 2003) determined that the area of greatest risk of fissure development is to the east of the SAHL, roughly parallel to the County Road, and from the southern end of the open pit to the northeast corner of the SAHL.

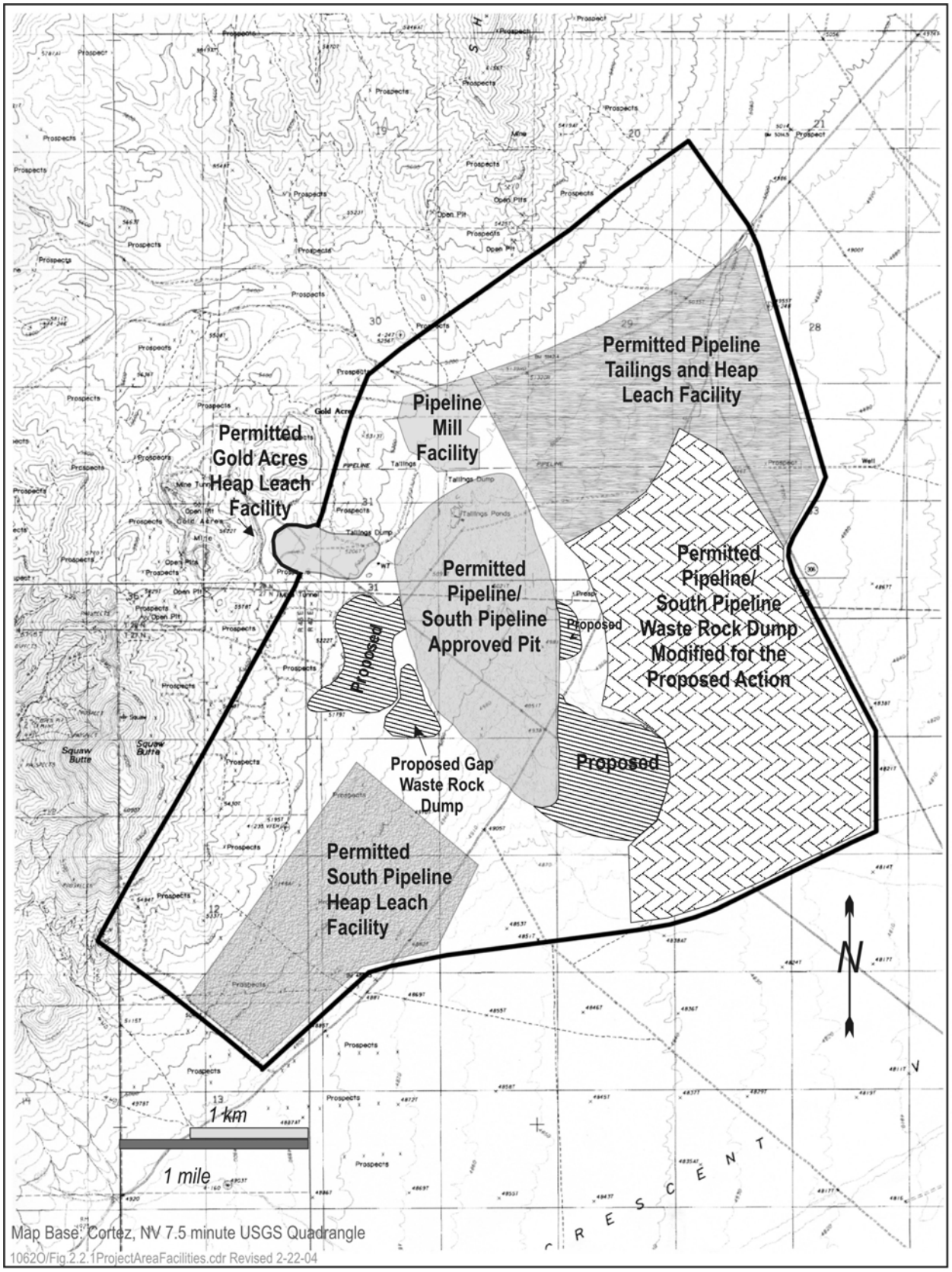

Figure 2.2.1 Project Area Facilities

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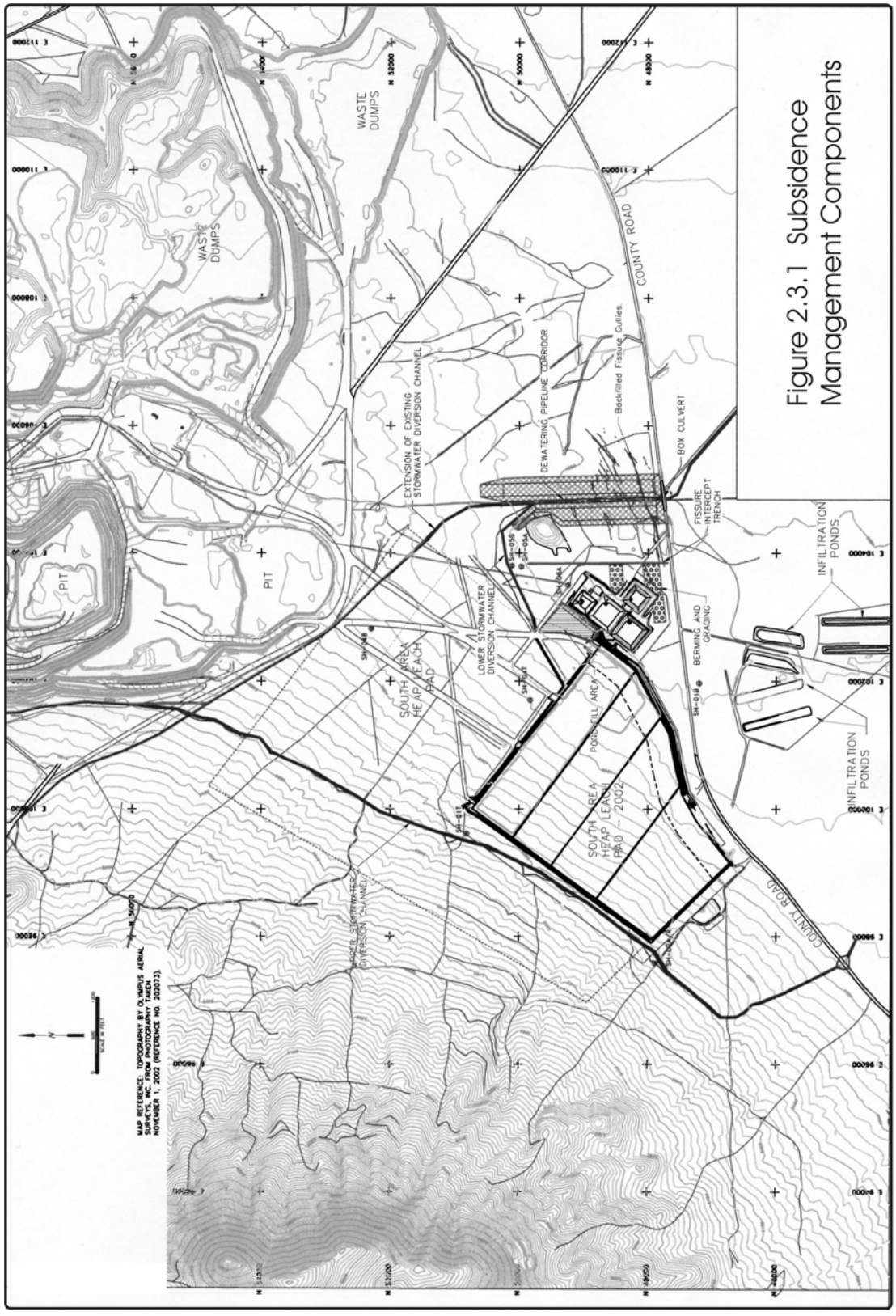
Figure 2.3.1 Subsidence Management Components
WASTE DUMPS
WASTE DUMPS
PIT
PIT
EXTENSION OF EXISTING STORMWATER DIVERSION CHANNEL
DEWATERING PIPELINE CORRIDOR
Backfilled Fissure Gullies
COUNTY ROAD
BOX CULVERT
FISSURE INTERCEPT TRENCH
INFILTRATION PONDS
LOWER STORMWATER DIVERSION CHANNEL
SOUTH HEAP LEACH PAD
BERMING AND GRADING
POND FILL AREA
SOUTH HEAP LEACH PAD – 2002
INFILTRATION PONDS
COUNTY ROAD
UPPER STORMWATER DIVERSION CHANNEL
MAP REFERENCE: TOPOGRAPHY BY OLYMPUS AERIAL SURVEYS, INC. FROM PHOTOGRAPHY TAKEN NOVEMBER 1, 2002 (REFERENCE NO. 020313).

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The review found that the August 13, 1998 to March 11, 1999 interferograms depict differential subsidence occurring in the area now occupied by and adjacent to the SAHL (Amec 2003). Construction of the SAHL was completed in April 2002 after the majority of the subsidence and horizontal strain depicted on the interferograms occurred. The past ground subsidence appears to have occurred at a relatively consistent rate based on data from the interferometry.

The region of maximum subsidence is to the northeast of the SAHL, in the region south of the open pit (Figure 2.3.2). From the southern end of the open pit, a southwest-trending linear feature persists in all of the more recent interferometric scenes. This feature delineates a boundary between non-subsiding terrain to the northwest, and settlement terrain to the southeast. This trend intersects the SAHL along its northeastern side, then bifurcates the pad, ultimately converging with a similar east-trending interferometric feature roughly parallel to the County Road south of the SAHL ponds. The intercepted interferometric feature then continues east, becoming coincident with the position and trend of the Windmill Fissures. As demonstrated by the occurrence of the Windmill Fissures, fissuring is most likely to occur along these fringe areas between contrasts in the amount of ground deformation.

Subsidence-related risks to the SAHL could result from a potential overland flow of water (e.g., breakage or leak from an overland water conveyance) into an earth fissure, followed by erosion and piping of the shallow soil profile. Based on this scenario, the subsequent undermining of the integrity of the liner has been identified as the primary potential risk.

Fissure displacement of sufficient magnitude to compromise liners under the SAHL pose a secondary potential risk. This has a lower probability of occurrence as no fissures have been identified along the boundary of the leach pad or at the embankment toes of the ponds. The horizontal strain necessary to produce an earth fissure is an order of magnitude less than that required to rupture a geomembrane liner. The issue is one of subsequent displacement of the fissure aperture, not vertical displacement on the fissure; a gradual process that can be monitored to assure the integrity of the containment systems.

A second Project facility experiencing localized differential subsidence is the waste rock dump; however, subsidence-induced changes have no influence upon the operation of the waste rock dumps. Periodic monitoring of the crest elevation profile of the tailings dam has detected no appreciable settlement.

2.3.2.2 Protective Measures

A multi-tiered, integrated, and redundant management strategy has been designed for the SAHL in response to the information and delineation of the Windmill Fissures. This strategy includes the following interrelated components:

- Stormwater diversion;
- Instrumentation and pressure monitoring on the dewatering pipelines;
- An intercept trench east of the SAHL processing area;

- Backfilling of the existing open fissure gullies;
- Protective blankets across fissure traces between the intercept trench and the process area;
- Emplacement of alluvial waste rock dikes to create a corridor, and synthetic lining of that corridor to provide containment and channelization in the event of dewatering line breaks; and
- Monitoring system designed to measure subsidence rate and horizontal strain.

The intent of most of these management strategies is to prevent the introduction of large quantities of water from entering the fissure complex as the result of meteoric events or dewatering line breaks. Redundancy is provided in the design elements by a second level of safety represented by the intercept trench and protective blankets. These elements will protect the SAHL should fissure gullies develop from large volumes of water entering the fissures. Each of these components is described in the following sections.

2.3.2.2.1 Primary Diversion Ditch

A primary diversion ditch has been constructed to intercept and route any surface water runoff from the watershed areas upgradient of the SAHL and adjacent fissure complex. The ditch begins along the western margin of the Pipeline/South Pipeline open pit and extends along a southwest alignment to discharge south of the County Road approximately 2,400 feet southwest of the southwest corner of the SAHL as shown on Figure 2.3.1.

The ditch has been designed to safely pass the runoff from a 100-year, 24-hour storm event with 0.5 feet of freeboard. The ditch consists of a trapezoidal cross section, 15 feet in width at the base and a depth ranging from 2.5 feet to 4.3 feet. Culverts were installed in the Gold Acres haul road and the County Road, sized to accommodate the design peak flow.

2.3.2.2.2 Pressure Monitoring on Dewatering Pipelines

CGM has installed a pressure monitoring system on the dewatering pipelines. This system will alert the operator to sudden reductions in the dewatering pipeline pressure.

2.3.2.2.3 Fissure Gully Backfilling

Existing fissure gullies were backfilled, primarily as a safety issue to preclude humans and wildlife from entering the open gullies. Backfilling is designed to include a relatively coarse-grained, permeable material. The intent of the permeable back fill is to provide a rapid means of dissipation for any surface water entering the existing fissure gullies.

2.3.2.2.4 Intercept Trench

The fissure intercept trench was located immediately east of the SAHL process area and west of the main fissure complex as shown on Figure 2.3.1. The intent of the trench is to provide a linear intercept area west of the fissure field to minimize the potential for extension and propagation of fissure gullying to the west of the trench in response to large influxes of water.

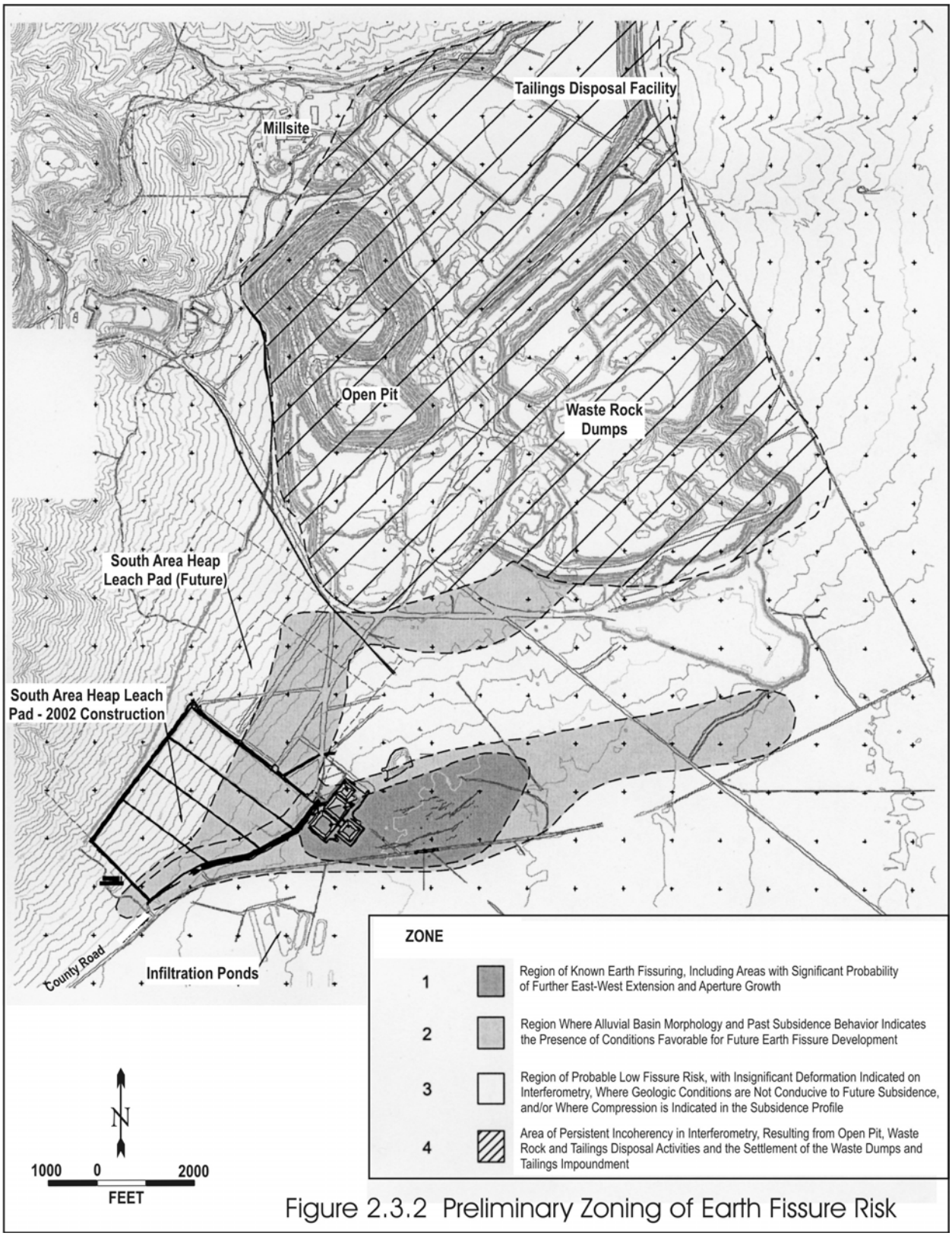

Figure 2.3.2 Preliminary Zoning of Earth Fissure Risk

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The fissure intercept trench is approximately 2,200 feet in length, in a generally north to south direction. The trench was excavated to a depth of approximately 35 feet and was approximately three feet in width at the base. The trench backfill was encapsulated with a geotextile and composed of granular, free draining materials from the Gravel Pit. Similar to the fissure gully backfill, the trench backfill is intended to provide a means of rapid dissipation of surface water that may enter a fissure to the east of the trench. The geotextile is incorporated into the backfill to provide a means to filter the overlying highly dispersive silts to preclude the formation of gullying due to erosion. The trench was capped with a coarse waste rock material to provide an additional level of surface water diversion and erosion control.

2.3.2.2.5 Protective Berming and Grading

The berming and grading provide an additional measure of surface and process water exclusion from the fissure field between the intercept trench and the process ponds by excluding surface flow from the fissure area. The ground surface of the fissure area is uncovered to allow for visual inspection to assess changes in the identified fissures. Location of the berming and grading is shown on Figure 2.3.1.

2.3.2.2.6 Alluvial Waste Rock Dikes

Two parallel dikes composed of alluvial waste rock from the pit were placed adjacent to the existing dewatering lines as shown in Figure 2.3.1. The intent of the dikes is to provide a protected corridor around the dewatering lines to channel water from a potential dewatering line break past the fissure complex to discharge south of the County Road. The dikes are 30 to 60 feet in height and provide a corridor 50 feet wide for the dewatering pipelines and an access road for vehicular traffic. The secondary diversion channel also discharge to the corridor provided by the dikes.

2.3.2.2.7 Dewatering Line Corridor Geomembrane

The corridor area formed by the dikes is underlain by an HDPE geomembrane liner to provide containment for water in the event of discharge from the secondary stormwater diversion channel and/or a dewatering line break. The geomembrane liner provides an additional line of defense to preclude the introduction of water to the fissure complex. The dewatering lines pass under the County Road and are routed through a six-foot by five-foot box culvert.

2.3.2.2.8 Fissure Risk Assessment

Based on Amec's report (2004), it appears that a potential exists for continued ground deformation resulting from the ongoing dewatering operations. Possible ground deformation risks are likely associated with three related responses of the underlying alluvial profile to the strain resulting from differential subsidence. These responses include brittle rupture resulting in earth fissures (susceptible to subsequent erosion), widening of fissure aperture due to continued ground displacement, and the possible loss of strength in foundation soils due to high strain at depth. The consequences associated with each of these responses to subsidence must be viewed in the context of the engineered systems at risk, such as mine facilities and public roads, and a consideration for the influence of loading and varied behavior of the constructed elements.

The probability of occurrence, the consequences of that occurrence, and the degree of uncertainty associated with the three possible risks vary widely. The Amec report (2004) outlines the probable locations where substantial ground deformation may occur, characterizes the nature of the risks identified, and delineates zones of potential ground deformation risks to mine facilities and other areas of use. In consideration of the engineered facilities in the area of possible fissuring, the assessment indicates that the only substantial potential risk with a reasonable probability of occurrence is the loss of foundation support resulting from erosion of earth fissures. The two remaining potential ground responses to subsidence appear to pose little risk to the engineered facilities. The assessment indicates that the potential is unlikely for liner damage due to fissure aperture and for deep-seated foundation instability due to strain weakening of the alluvial profile (Amec 2004).

Figure 2.3.2 depicts the locations with potentially sufficient horizontal strain to cause earth fissures during the life of the mine and dewatering operations (Amec 2004). This figure identifies zones of potential risk of earth fissuring. Zone 2 is the area with the higher potential for development of additional earth fissures. As shown on Figure 2.3.2, the SAHL operations are the engineered facilities of primary concern regarding the effects of ground subsidence. However, mitigative measures, as outlined above, have been completed to reduce fissure development risk to these facilities. In addition, compression due to ore loading on the SAHL pad further reduces the risk of earth fissures.

2.3.2.2.9 Monitoring Program

The purpose of monitoring ground movement is to provide advanced knowledge of conditions that could lead to further earth fissuring, or growth of the fissures known to be present. The focus of the monitoring activities is on the existing mine facilities and locations of planned future facilities. CGM's (2004) monitoring plan addresses the following components:

- Immediate area of subsidence in the Gold Acres window;
- Immediate area of earth fissuring in the Gold Acres window;
- Southern Crescent Valley regional subsidence;
- Southern Crescent Valley regional earth fissuring; and
- Data Reporting.

The monitoring in the immediate area of the Gold Acres window includes the following: monitoring water levels in wells monthly; monitoring lateral and vertical ground surface movement quarterly for a minimum of two years; and completing field surveying quarterly for a minimum of two years. Alluvial drawdown will be monitored monthly using the shallow alluvial wells in the Gold Acres window (SMA-series), deep alluvial wells within the window (CRA-series), and shallow alluvial wells outside the window (IM-series and IZ-series). Alluvial water level measurement data will be compared with ground surface locations and elevations to characterize the influence of dewatering on ground displacement. The ground surface will be monitored for lateral and vertical displacement via three complementary techniques: extensometry, optical survey, and total station global

positioning system (GPS) survey. Results from the three techniques will be compared and correlated to verify ground surface measurements. The field surveys will be visual ground inspections by experienced CGM personnel examining the mine infrastructure and looking for evidence of cracks, potholes or other features in the facility perimeter, as well as roads, and/or native soils at locations along identified paths south of the open pit. Other areas where ground surface measurements indicate significant displacement will also be visually inspected.

The objective for ground subsidence and earth fissure monitoring in southern Crescent Valley is to provide data on subsidence that could affect current or future constructed structures. The regional monitoring system includes collection of the following data: synthetic aperture radar interferometry (InSar) data collected annually for a minimum of three years; lateral and vertical ground surface monitoring collected quarterly for a minimum of three years; and complete field surveys collected quarterly for a minimum of two years.

The results of the monitoring will be reported to the BLM and the NDEP on an annual basis. The monitoring will better define the present and potential future conditions at the mine facilities and in southern Crescent Valley. Response levels will be specified when additional information identifies zones of interest through the following:

- Observations extending along the length of existing fissures;
- Widening of existing fissures;
- Formation of new fissures;
- Increased strain accumulation; and
- Observation of unusual erosional features.

Based on Amec's report (2004), the specific observations, and the zones of interest, CGM responses will include: notification of regulatory authorities; remeasurement of parameters of interest; modification and/or intensification of monitoring plan and schedule; and mitigation of surface subsidence and earth fissure features. Mitigation measures will focus on protecting public safety and mine infrastructure from the effects of ground subsidence and earth fissures.

2.4 Approved Waste Rock Dumps

Approved surface disturbance associated with the Pipeline/South Pipeline waste rock dump is approximately 1,813 acres, which incorporates the old Crescent Pit waste rock dump (Table 2.1.2). The waste rock dump has the capacity to store approximately 700 million tons of waste rock (BLM 2000a, pages 2-19 and 3-14; BLM 1996a, page 2-52; BLM 1994, page 2-6) (Figure 2.2.1). The Pipeline/South Pipeline waste rock dump is developed by end-dumping waste rock from the mine haul trucks, resulting in a working dump face angle of approximately 38 degrees (the angle of repose). Wherever feasible, the waste rock dumps are designed and built as terraced structures to facilitate recontouring and reclamation. Each terrace is limited to a maximum height of 200 feet; the approved height of the Pipeline/South Pipeline waste rock dump is 250 feet. The South Pipeline Waste Rock Dump Study (Geomega 1997) identified a low potential for impacts resulting from the

waste rock material; therefore, waste rock dump encapsulation zones are not part of the Pipeline/South Pipeline Project.

2.5 Approved Ore Processing Facilities

The approved ore processing facilities include the Pipeline/South Pipeline mill facility, the Pipeline/South Pipeline tailings and heap leach facility, the South Pipeline heap leach facility, the Gold Acres heap leach facility, the Cortez mill, the Cortez CFB roaster, and the Cortez CIL mill and tailings facilities. The processing facilities are summarized and described in detail in the following sections of the South Pipeline Final EIS (BLM 2000a, pages 2-19 through 2-22 and 3-14 through 3-18).

2.5.1 Pipeline/South Pipeline Mill Facility

The Pipeline/South Pipeline mill and plant are located in the Project mine and process area. The mill was permitted to operate at an average daily rate of 13,500 tpd. The disturbance area for the plant and mill facility is 133 acres. The milling process is described in detail in the South Pipeline Final EIS (BLM 2000a, pages 2-20 and 3-18).

2.5.2 Pipeline/South Pipeline Tailings and Heap Leach Facility

The Pipeline/South Pipeline Integrated Heap Leach/Tailings facility comprises a single integrated system, referred to as Area 28. The facility is authorized to cover 932 acres; the components and processes are discussed in the South Pipeline Final EIS (BLM 2000a, pages 2-20 through 2-22 and 3-18).

CGM is currently conducting research at the facility for the processing of refractory ores with alternative (non-cyanide) heap solutions.

2.5.3 South Area Heap Leach Facility

CGM constructed a separate heap leach facility as part of the South Pipeline Project with an authorized disturbance area of 758 acres. A full description of the facility is provided in the South Pipeline Final EIS (BLM 2000a, pages 3-14 through 3-18).

2.5.4 Gold Acres Heap Leach Facility

The Gold Acres heap leach facility consists of a heap leach pad and associated solution ponds with a disturbance of 49 acres. Specific details of the leach pad and associated solution ponds are outlined in the South Pipeline Final EIS (BLM 2000a, pages 2-21 through 2-22).

2.5.5 Cortez CFB Roaster and the Cortez CIL Mill Tailings Facility

The Cortez facility includes the crushing and grinding circuits, the CFB roaster, the CIL mill, and the tailings facility. The majority of the existing Cortez facility is located on patented land. A general discussion of crushing and grinding, tailings, CIL mill and CFB roasting processes are described in the South Pipeline Final EIS (BLM 2000a, pages 2-20 through 2-22).

2.6 Approved Support Activities

2.6.1 Support Facilities

CGM support facilities associated with the existing operation are located at the Cortez facility and the Pipeline/South Pipeline Project Area. Pipeline/South Pipeline administrative and support facilities are located on Figure 2.2.1 within the area identified as Pipeline Mill Facility and include the following:

- Administration Office;
- Safety/Change House, including a First Aid Station;
- Mill Facility;
- Assay Lab;
- Shop/Warehouse/Core Shed/Dewatering Shop;
- Gold Acres Heap Leach Pad and Process Facility;
- South Area Heap Leach Pad and Process Area;
- Hydrocarbon Soil Bioremediation Facilities;
- Landfill Area;
- Ready Line;
- Heavy Equipment Fuel Station;
- Light Vehicle Fuel Station;
- Diesel Storage Facility;
- Gas Storage Facility;
- Miscellaneous Lubricants Storage Facility;
- Tire and Large Component Storage Area;
- Truck Wash Facility; and
- Explosives Storage Magazines and Silos.

Existing administrative and support facilities located at the Cortez facility include an administrative office, assay lab, and first aid station, all of which are located in buildings at the Cortez mill area. Other items at the Cortez facilities include the existing mobile mining equipment ready line, maintenance shop, explosives magazine, office, and fuel and lube-oil storage facilities.

2.6.2 Work Force

The work force for Pipeline/South Pipeline operation is between 450 and 500 employees. In addition, up to 50 contractors and temporary construction workers may be working in the Project Area.

2.6.3 Mobile Equipment

The mobile equipment utilized by the Pipeline/South Pipeline Project is outlined in Table 2.6.1.

Table 2.6.1: Approved Mobile Equipment

TYPE OF EQUIPMENT	MAXIMUM NUMBER OF UNITS IN THE PROJECT AREA[1]
Electric Shovels	3
Front Loaders/Hydraulic Shovels	5
Haul Trucks (100 - 310 ton)	20
Rotary Drills	5
Track Bulldozer	7
Rubber Tired Bulldozer	5
Motor Grader	5
Water Trucks	5
Loaders	3
Blasting Trucks	3

1 - Contract mining may require additional equipment above the listed CGM-owned mobile equipment.

2.6.4 Water Supply and Consumptive Use

In total, the Pipeline/South Pipeline Project consumptively used up to 10,000 gpm. The South Pipeline Final EIS outlined a consumptive water use of 4,000 gpm primarily for the following purposes: a) replace evaporative losses from the tailings and heap leach facilities; b) replace evaporative losses from the future pit lake and infiltration ponds; c) mill processing; d) dust control on the roads and other surface disturbance; and e) evaporation from the pit lake and infiltration ponds (BLM 2000a, Page 3-18; Section 3.6.4). In addition, some water is also consumed as entrained moisture in the mill tailings and heap leach material. Water used for mining and processing associated with the Pipeline/South Pipeline Project is supplied through the mine dewatering wells discussed in the South Pipeline Final EIS (BLM 2000a, pages 2-1 through 2-15). An additional 6,000 gpm (annualized) of dewatering water is delivered to the adjacent Dean Ranch, via a right-of-way (ROW), which is used for irrigation.

The Pipeline/South Pipeline Project potable water supply is authorized through the State of Nevada Bureau of Health Protection Services. The Cortez facility potable water is provided via bottled water or an approved water supply well.

2.6.5 Power Supply and Utilities

Electrical power, mine site communication facilities, and telephone communication systems are outlined in the South Pipeline Final EIS (BLM 2000a, page 2-23).

2.6.6 Waste Disposal and Sanitary System

All sanitary waste is disposed of in existing on-site, state-approved sanitary leach fields. All trash and refuse is hauled to an approved Class III-waivered landfill facility located on private land within the Project Area. In addition, CGM also deposits approximately 250 used haul truck tires per year

into the waste rock dump. All refuse is handled in accordance with applicable federal, state, and county laws and regulations. CGM has initiated a recycling program for cardboard and aluminum.

2.6.7 Chemical Storage and Hazardous Materials Management

Transportation, storage, handling, use and disposal of the chemicals required for the operations within the Project Area are discussed in detail in the South Pipeline Final EIS (BLM 2000a, pages 2-23 and 3-19 and Tables 2.6.2 and 3.6.2).

2.6.8 Roads and Haul Roads

Many access roads and haul roads exist within the Project Area. These roads are described in the South Pipeline Final EIS (BLM 2000a, pages 2-24 and 3-20).

2.6.9 Gravel Pits

There are two gravel pits associated with the Pipeline/South Pipeline Project; the Airport Gravel Pit and the Frome Gravel Pit. The Airport Gravel Pit is located along the south side of the haul road between Cortez and the Pipeline/South Pipeline facilities, approximately one mile west of the Cortez facilities. Gravel material from this pit is used by CGM for road surfacing, concrete, and other related uses tied to the construction and operation of the Pipeline/South Pipeline Project and other CGM facilities. Surface disturbance approved for the Gravel Pit is approximately 500 acres. This includes 13 acres of disturbance associated with haul roads. The Gravel Pit is discussed in the South Pipeline Final EIS (BLM 2000a, page 3-21, Table 3.1.1); the Pipeline Gravel Pit Project EA (BLM 1996b); and the Gravel Pit Expansion (CGM 2001b).

The Frome Gravel Pit is located in the northeastern portion of the Project Area, approximately three miles northeast of the waste rock dump. Surface disturbance for this gravel pit is 45 acres. Gravel from this pit is currently used as a source for construction gravel and drain rock.

2.6.10 Fencing

Certain project facilities located within the Project Area have been fenced, including all areas of cyanide use. Fence specifications, locations, and access are discussed in the South Pipeline Final EIS (BLM 2000a, pages 2-25 and 3-21). As of January 2003, a majority of the project approved disturbance area has been fenced with approximately nine miles of four-wire antelope fence (with smooth bottom wire). The purpose of the fence is to exclude cattle from the active mine area for safety reasons, and to minimize the impact of unrestricted grazing on revegetated areas.

2.6.11 Health and Human Safety

Project safety, security, and fire protection measures are also outlined in the South Pipeline Final EIS (BLM 2000a, page 2-25 and 2-26). The measures include, but are not limited to, monitoring personnel for exposure to hazardous chemicals, a roving security patrol, and a fire protection plan.

2.7 Exploration

Exploration activities are ongoing within the Pipeline/South Pipeline Project areas as outlined in the Pipeline Project Plan of Operations (CGM 1992), South Pipeline Plan of Operations (CGM 1996, page 5-14), and the South Pipeline Final EIS (BLM 2000a, page 2-26). Surface disturbance within these areas totals 91.2 acres.

2.8 Reclamation

As presented in the Pipeline Final EIS, Pipeline Infiltration Project EA, and South Pipeline Final EIS, CGM has identified the reclamation activities to be undertaken as part of the Pipeline Project (BLM 1996a, pages 2-26 through 2-35; BLM 1999, pages 2-11 and 2-14; BLM 2000a, pages 2-26 and 3-21 through 3-26). The activities include the following:

- Prevention of slope instability;
- Control of soil erosion and sediment transport;
- Reduction in visual impacts;
- Minimization or elimination of public safety hazards;
- Restoration of surface hydrology patterns;
- Revegetation of disturbed sites; and
- Establishment of diverse perennial vegetation communities.

2.9 CGM Environmental Protection Measures

As identified in the Pipeline Final EIS and the South Pipeline Final EIS, CGM has committed to the following activities in order to minimize environmental effects associated with the Pipeline/South Pipeline Project (BLM 1996a, pages 2-35 through 2-40; BLM 2000a, pages 2-26 and 3-26 through 3-28). These commitments include the following:

- Control of fugitive dust from mine-related roads and disturbed surfaces;
- Sediment control;
- Conformance with the spill prevention and containment plan;
- Human health, safety, and emergency response training;
- Superfund Amendment and Reauthorization Act of 1986 (SARA) Title III reporting;
- Weed monitoring and control;

- Site/reclamation monitoring; and

- Long-term financial assurance.

In addition to the aforementioned environmental protection measures, CGM has committed to the following measures to prevent unnecessary or undue degradation during mine design, construction, operation, and closure. These measures are derived from the general requirements established in BLM's Surface Management Regulations at 43 CFR 3809 and NDEP mining, reclamation, water, and air quality regulations:

- All regulated components of the facility would be designed and constructed to meet or exceed BLM/NDEP/NDOW/Nevada Division of Water Resources (NDWR) design criteria. Waste rock dumps and stockpiles that do not require engineered containment would be evaluated for their potential to release pollutants and would be routinely monitored;

- The heap leach facility would be operated in accordance with approved fluid management, emergency response and monitoring plans established by NDEP permit conditions and the BLM Cyanide Management Plan;

- All mineral exploration and development drill holes, monitoring and observation wells, and production dewatering wells subject to Nevada regulations would be properly abandoned to prevent contamination of water resources;

- All regulated wastes would be managed according to relevant regulations;

- Surface disturbance would be minimized while optimizing the recovery of mineral resources;

- Surface water drainage control would be accomplished by diverting stormwater, isolating facility runoff, and minimizing erosion, according to state regulations; and

- Surficial soils and alluvial material mined as part of the open pit development with favorable characteristics would be managed as a growth media resource and removed, stockpiled and used during reclamation, where suitable. A plan would be implemented that addresses earthwork, revegetation and stabilization, detoxification and disposal, and monitoring operations necessary to satisfactorily reclaim the proposed disturbance. The disturbance includes roads, process ponds, heaps, waste rock dumps, buildings, and equipment, as covered in the South Pipeline Plan of Operations (CGM 1996).

2.10 CGM Sustainability Activities

CGM recognizes that any mining operation such as the Pipeline Project has both short- and long-term impacts to the environment and to the local communities in the region of the mine. Placer Dome and Kennecott Minerals, the parent companies forming the Cortez Joint Venture, are international mining entities that have adopted a sustainable development policy for all of their operations. Through the Board of Directors, Placer Dome, the managing partner of the Joint Venture, has summarized their Sustainable Development Policy with the following quote by Bernard Coulombe, Chairman, Safety and Sustainability Committee of the Placer Dome Board of Directors:

> "Practicing sustainability means implementing environmental, social and economic principles and sometimes this requires a balance based on local needs. We believe fundamentally in the democratic rights of people at the local and national levels to make informed choices about this balance. Placer Dome's management is working with local communities in all areas where the company operates to translate the economic benefits of today's mining activities into long-term sustainable advantages that will persist long after the mines shut down."

CGM has adopted Placer Dome's sustainable development policy, and has incorporated the following in its day-to-day operations:

- Create a work environment where employees are a) recognized as the key to the mine's success, b) receive fair pay and benefits, c) maintain a safe work standard, and d) promote understanding that the operation is following the principles of sustainable development;

- Work closely with Lander County, state, and federal agencies on permitting and compliance in all phases of the operation;

- Implement actions during operations that incorporate environmentally sound practices that facilitate operation and closure of the mine and process facilities;

- Address “legacy” issues associated with the older mining operations as part of the present operation;

- Define CGM's stakeholders and develop plans to keep them involved in the process;

- Provide local communities (Elko, Battle Mountain, Crescent Valley, Carlin and Eureka) with regular updates about CGM's activities;

- Work in conjunction with other regional mining companies and affected communities to promote an understanding of the mining life cycle, including closure. This partnership will promote the development of an overall plan to minimize impacts to communities as the mines close;

- Work with community economic development interests to evaluate the CGM's asset base, including facilities and ranch properties, for reasonable post-mining land uses that may provide long-term economic stability to the local area;

- Maintain an active donations and scholarship program; and

- Encourage all employees to be part of their local community.